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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,528	04/11/2001	Jing W. Jiang	21660-05933	2486
758	7590	01/04/2005	EXAMINER	
FENWICK & WEST LLP SILICON VALLEY CENTER 801 CALIFORNIA STREET MOUNTAIN VIEW, CA 94041			HAILE, FEBEN	
			ART UNIT	PAPER NUMBER
			2663	

DATE MAILED: 01/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,528

Applicant(s)

JIANG ET AL.

Examiner

Feben M Haile

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07/06/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 21-26 is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18 is/are rejected.
- 7) ☒ Claim(s) 11-12, 17 & 19-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ April 11, 2001
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to because figures 1 and 2 require descriptive legends for each block diagram. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be

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labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: on page 4 (paragraph 0020), the reference character "150" is used to denote the "network" unit and a "user" entity. Appropriate correction is required.

Claim Objections

4. Claims 11-12 are objected to because of the following informalities: despite a slight difference in wording, claims 11-12 are a duplicate of claims 3-4. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 3, 7-8 and 11-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Tzannes (US 6,667,991).

Regarding claim 1, Tzannes discloses the limitations: tuning an applied bit rate window of a head transponder to a predetermined frequency (transmitter and receiver exchange information on data rate capabilities; see column 11 lines 7-9 and figure 4 unit 410), receiving a request at the head transponder to change the bit rate window (receiver determines data rate should be increased or decreased and sends request to transmitter; see column 11 lines 12-22 and figure 4 units 420-450), at the head transponder (1) generating a communications signal having a bit rate of the predetermined frequency (transmitter sends rate adaptation message; see column 11 lines 28-30 and figure 4 unit 460) (2) inserting a command into the communications signal, wherein the command states to establish a new bit rate window (an inverted sync symbol is used as a flag to signal the receiver that a new bit allocation table (BAT) is going to be used; see column 11 lines 24-26 and figure 4 unit 460) (3) transmitting the communications signal to a downstream element (the new BAT is used for transmission on the first frame following the inverted sync symbol; see column 11 lines 26-28 and figure 4 unit 460), and at the head transponder, transferring payload of incoming signals having a bit rate within the bit rate window (the new BAT is used for transmission on a finite number of frames following the inverted sync symbol; see column 11 lines 26-28).

Regarding claims 3 and 11, Tzannes discloses the limitations: at the head transponder (1) performing bit rate verification on incoming signals (transmitter determines that data rate should be increase or decreased; see column 11 lines 51-52 and figure 5 unit 520) (2) transferring the payload of signals having a bit rate within the

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new bit rate window (new bit allocation table is used for transmission on the first frame or a finite number of frames; see column 12 lines 6-8 and figure 5 unit 580).

Regarding claim 7, Tzannes discloses the limitation: performing FEC encoding on incoming signals at the head transponder (transmitting at the second bit rate using specified number of parity bits for forward error correction (see column 19 lines 49-54).

Regarding claim 8, Tzannes discloses the limitation: performing FEC decoding on incoming signals at the head transponder (transmitting at the second bit rate using specified number of parity bits for forward error correction (see column 19 lines 49-54).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 4-6, 9-10 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tzannes.

Regarding claim 2, Tzannes discloses the limitations: receiving the communications signal at the tail transponder (transmitter sends message to receiver; see column 14 lines 12-16 and figure 7 unit 730), detecting a change in input bit rate at the tail transponder (receiver receives rate adaptation message; see column 14 line 17 and figure 7 unit 740) and at the tail transponder (1) generating a response signal having a similar bit rate as the communications signal (receiver sends message to transmitter granting rate adaptation message; see column 14 lines 18-20 and figure 7

unit 750) (2) transferring to the head transponder a payload of signals having a bit rate within the bit rate window (the new BAT is used for reception on a finite number of frames following the inverted sync symbol; see column 14 lines 31-34 and figure 7 unit 780).

Tzannes, however, does not teach the limitation: inserting a command into the response signal indicating receipt of a command to set a new bit rate window.

However, Tzannes does disclose the transmitter using an inverted sync symbol as a flag to signal the receiver that a new bit allocation table (BAT) is going to be used (see column 11 lines 24-26 and figure 4 unit 460). The receiver could implement this technique to send a signal to the transmitter.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify Tzannes's method for the transmitter so the receiver could insert a flag into a message that it sends to the transmitter granting the rate adaptation message. The motivation to do so would have been for the receiver to acknowledge to the transmitter the receipt of the rate adaptation request.

Regarding claims 4 and 12, with the features in parent claim 2 addressed above, Tzannes, as modified, discloses the limitations: at the tail transponder, performing bit rate verification on incoming signals (receiver determines that data rate should be increased or decreased (see column 11 lines 12-13 and figure 4 unit 420) (2) transferring the payload of signals having a bit rate within the new bit rate window (new bit allocation table is used for reception on the first frame or a finite number of frames; see column 11 lines 31-34 and figure 4 unit 470).

Regarding claims 5-6, Tzannes discloses all of the limitations of independent base claim 1.

However Tzannes does not teach the limitations: signals are transmitted over a passive optical network (PON), which is a communication fabric comprising optical fiber
passive optical network (PON), which is a communication fabric comprising optical fiber connected in a star topology.

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement the method of transferring signals between two transponders over a passive optical network. The motivation to do so would have been because a passive optical network is capable of delivering high volumes of upstream and downstream bandwidth, which can be changed depending on an individual needs.

Regarding claim 9, with the features in parent claim 2 addressed above, Tzannes, as modified, discloses the limitation: performing FEC encoding on incoming signals at the tail transponder (receiving at the second bit rate using specified number of parity bits for forward error correction (see column 19 lines 49-54).

Regarding claim 10, with the features in parent claim 2 addressed above, Tzannes, as modified, discloses the limitation: performing FEC decoding on incoming signals at the tail transponder (receiving at the second bit rate using specified number of parity bits for forward error correction (see column 19 lines 49-54).

7. Claims 13-16 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCormack et al. (6178213), hereinafter referred to as McCormack in view of

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Bobeck et al. (US 6075787), hereinafter referred to as Bobeck and in further view of Tzannes (US 6,667,991).

Regarding claim 13, McCormack discloses the limitations: a clock and data recovery unit ("CDR") coupled to receive the inbound signal, wherein the bit rate window of the CDR is programmable (see column figure 7 unit 214); a communications signal generator that generates a communications signal (figure 7 unit 202 or 204); a multiplexer ("MUX") coupled to receive the communications signal from the communications signal generator and coupled to receive the inbound signal from the CDR and that transfers either the communications signal or the inbound signal (figure 7 unit 226); a central processing unit ("CPU") coupled to the MUX and that controls which signal the MUX transfers (figure 7 unit 220); and a transmitter coupled to receive the transferred signal from the framing device and that transmits the transferred signal to the downstream network element.

However McCormack does not teach the limitation: a framing device coupled to receive the transferred signal from the MUX, wherein the framing device embeds a message into the communications signal and such message is directed to the at least one downstream network element and

Bobeck discloses the limitations: a framing device coupled to receive the transferred signal from the MUX, wherein the framing device embeds a message into the communications signal and such message is directed to the at least one downstream network element (output of multiplexer is coded using a Reed Solomon

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scheme for forward error correction and prefixed with a framing byte; see column 7 lines 47-55 and figure 2 units 215 & 220).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement the FEC encoder/Framer from Bobeck's apparatus into McCormack's system. The motivation to do so would have been to send extra information along with the data from the multiplexer, which can be used by the receiver to check and correct the data.

Regarding claims 14 & 16, with the features in parent claim 13 addressed above, McCormack, as modified, discloses the limitation: the communications signal is set to a frequency that the at least one downstream network element recognizes as used to transmit messages from the transponder (first or second channel comparators determine the center of gravity of a data cell, which is then provided to a phase adjuster, resynchronizer and outputted to some destination; see column 8 lines 48-51 and figure 7 units 202 or 204, 216, 222, & 230) and the CPU is coupled to control the bit rate window of the CDR (the clock recovery provides a signal to the rate counter; the error detector also provides a signal to the rate counter, which provides bit error rate information to the controller; see column 9 lines 42-44 and figure 7 units 214, 236, & 220).

Regarding claims 15 & 18, McCormack as modified, addresses the features of parent claim 13.

However, McCormack does not teach the limitations: the message instructs at least one downstream network element to establish a bit rate window and at least one

downstream network element transmits to the transponder a signal having the same frequency as the communications signal and acknowledges the receipt of the message from the transponder.

Tzannes discloses the limitation: the message instructs at least one downstream network element to establish a bit rate window (transmitter sends rate adaptation message using an inverted sync symbol as a flag to signal the receiver that a new bit allocation table (BAT) is going to be used; see column 11 lines 24-30 and figure 4 unit 460) and at least one downstream network element transmits to the transponder a signal having the same frequency as the communications signal and acknowledges the receipt of the message from the transponder (receiver sends message to transmitter granting rate adaptation message and the new BAT is used for reception on a finite number of frames following; see column 14 lines 18-34 and figure 7 unit 750 & 780).

It would have been obvious to one having ordinary skill in the art at the time of the invention was made to implement the method of Tzannes into McCormack's system, as modified. The motivation to do so would have been to implement the capability of seamless rate adaptation.

Allowable Subject Matter

8. Claims 17 & 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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9. Claims 21-26 are allowed. The following is an examiner's statement of reasons for allowance:

Regarding claim 21, the prior art fails to teach the limitation: "if CDR detects the bit rate of the inbound signal is not within a programmed bit rate window, the CPU commands the CDR to change its bit rate window to include a communications frequency".

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Magilaro (US 2003/0074674) Method and System for Dynamically Adjusting Video Bit Rates
- b) Tanaka et al. (US 6292875) Control Device for Storage Device and Method for Accessing the Storage Device
- c) Ito et al. (US 6014693) System for Delivering Compressed Stored Video Data by Adjusting the Transfer Bit Rate to Compensate for High Network Load
- d) Dualt et al. (EP 702 474 A1) Data Structure Transmission on Data Channel in ATM Communication Environment-Changing Bit Rate of Data


Structures Dynamically by Defining Change Indicator in Data Channel Indicative of End User's Request for Bit Rate Change

- e) Watanabe (JP 2004023732 A) Data Transmitting Device, Data Receiving Device, Data Transmitting Method and Data Receiving Method
- f) Marmur et al. (US 2003/0043432) Optical Transponder
- g) Aronson et al. (US 2004/0091028) Transceiver Module and Integrated Circuit with Dual Eye Openers and Equalizer

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Feben M Haile whose telephone number is (571) 272-3072. The examiner can normally be reached on 8:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



RICKY NGO
PRIMARY EXAMINER